

CLAIMS

What is claimed is:

1. A hydraulic braking system for a wheeled vehicle, comprising:
a first braking circuit comprising a first wheel brake, a first source of pressurized fluid, and a first hydraulic conduit connecting said first wheel brake to said first source, said first hydraulic conduit connecting said first wheel brake and said first source having a first control valve disposed therein, said first control valve operating to selectively prevent fluid flow from said first source to said first wheel brake;
a second braking circuit comprising a second wheel brake, a second source of pressurized fluid, and a second hydraulic conduit connecting said second wheel brake to said second source, said second hydraulic conduit connecting said second wheel brake and said second source having a second control valve disposed therein, said second control valve operating to selectively prevent fluid flow from said second source to said second wheel brake;
a connecting conduit connecting said first braking circuit and said second braking circuit; and
a floating piston disposed within said connecting conduit, said piston adapted to be displaced by the pressurized fluid provided by said first source when said first control valve is closed, the displacement of said piston generating an additional volume of pressurized fluid in said second hydraulic conduit effective to augment the pressurized fluid provided by said second fluid source for operation of said second wheel brake.
2. The hydraulic braking system of Claim 1 wherein said connecting conduit comprises a first end disposed to receive the pressurized fluid from said first source of pressurized fluid, and a second end disposed to receive the pressurized fluid from said second source of pressurized fluid.
3. The hydraulic braking system of Claim 1 wherein said system further includes a piston assembly comprising a cylindrical housing disposed within said

connecting conduit, said cylindrical housing having a first end disposed to receive the pressurized fluid from said first source and a second end disposed to receive the pressurized fluid from said second source, wherein said floating piston is disposed within said cylindrical housing, said floating piston having a first end disposed at the first end of said cylindrical housing and a second end disposed at the second end of said cylindrical housing, said floating piston being capable of reciprocal motion, wherein said floating piston is disposed between a first spring disposed at the first end of said cylindrical housing and a second spring disposed at the second end of said cylindrical housing.

4. The hydraulic braking system of Claim 3 wherein said piston assembly includes a first seal disposed about the first end of said floating piston and a second seal disposed about the second end of said floating piston, said piston assembly further including a vent opening in said cylindrical housing located between the first end and the second end of said floating piston, wherein the displacement of the first seal of said floating piston during reciprocal motion is limited to the area between the first end and said vent opening, and wherein the displacement of the second seal of said floating piston during reciprocal motion is limited to the area between the second end and said vent opening.

5. The hydraulic braking system of Claim 1 wherein said connecting conduit further includes a valve disposed between said first braking circuit and said floating piston for selectively preventing fluid flow in said connecting conduit.

6. A hydraulic braking system for a wheeled vehicle, comprising:
a plurality of wheel brakes capable of being operated individually;
at least a first source of pressurized fluid and a second source of pressurized fluid to supply pressurized fluid to each of said wheel brakes, each of said first source and said second source being responsible for providing fluid pressure to predetermined ones of said wheel brakes;

a first hydraulic conduit to connect said first source of pressurized fluid to said wheel brakes controlled by said first source of pressurized fluid;

a control valve disposed within said first hydraulic conduit to selectively prevent fluid flow through said first hydraulic conduit;

a second hydraulic conduit to connect said second source of pressurized fluid to said wheel brakes controlled by said second source of pressurized fluid;

a connecting conduit connecting said first hydraulic conduit and said second hydraulic conduit; and

a floating piston disposed within said connecting conduit, said piston adapted to be displaced by the pressurized fluid provided by said first source when said control valve is closed, the displacement of said piston generating an additional volume of pressurized fluid in said second hydraulic conduit effective to augment the volume of pressurized fluid provided by said second source.

7. The hydraulic braking system of Claim 6 wherein said control valve is a first control valve, and wherein said hydraulic braking system includes a second control valve disposed within said second hydraulic conduit to selectively prevent fluid flow through said second hydraulic conduit.

8. The hydraulic braking system of Claim 6 wherein said system further includes a piston assembly comprising a cylindrical housing disposed within said connecting conduit, said cylindrical housing having a first end disposed to receive the pressurized fluid from said first source and a second end disposed to receive the pressurized fluid from said second source, wherein said floating piston is disposed within said cylindrical housing, said floating piston having a first end disposed at the first end of said cylindrical housing and a second end disposed at the second end of said cylindrical housing, said floating piston being capable of reciprocal motion, wherein said floating piston is disposed between a first spring disposed at the first end of said cylindrical housing and a second spring disposed at the second end of said cylindrical housing.

9. The hydraulic braking system of Claim 8 wherein said piston assembly includes a first seal disposed about the first end of said floating piston and a second seal disposed about the second end of said floating piston, said piston assembly further including a vent opening in said cylindrical housing located between the first end and the second end of said floating piston, wherein the displacement of the first seal of said floating piston during reciprocal motion is limited to the area between the first end and said vent opening, and wherein the displacement of the second seal of said floating piston during reciprocal motion is limited to the area between the second end and said vent opening.

10. The hydraulic braking system of Claim 6 wherein said connecting conduit further includes a valve disposed between said first braking circuit and said floating piston for selectively preventing fluid flow in said connecting conduit.

11. A hydraulic braking system for a wheeled vehicle, comprising:
a first wheel brake;
a second wheel brake;
a first source of pressurized fluid adapted to provide a braking force to said first wheel brake;
a second source of pressurized fluid adapted to provide a braking force to said second wheel brake;
a first hydraulic conduit connecting said first source to said first wheel brake;
a control valve disposed within said first hydraulic conduit to selectively prevent fluid flow through said first hydraulic conduit;
a second hydraulic conduit connecting said second source to said second wheel brake;
a connecting conduit connecting said first hydraulic conduit and said second hydraulic conduit; and

a floating piston disposed within said connecting conduit, said piston adapted to be displaced by the pressurized fluid provided by said first source when said control valve is closed, the displacement of said piston generating an additional volume of pressurized fluid in said second hydraulic conduit effective to augment the pressurized fluid provided by said second fluid source for operation of said second wheel brake.

12. The hydraulic braking system of Claim 11 wherein said control valve is a first control valve, and wherein said hydraulic braking system includes a second control valve disposed within said second hydraulic conduit to selectively prevent fluid flow through said second hydraulic conduit.

13. The hydraulic braking system of Claim 11 wherein said system further includes a piston assembly comprising a cylindrical housing disposed within said connecting conduit, said cylindrical housing having a first end disposed to receive the pressurized fluid from said first source and a second end disposed to receive the pressurized fluid from said second source, wherein said floating piston is disposed within said cylindrical housing, said floating piston having a first end disposed at the first end of said cylindrical housing and a second end disposed at the second end of said cylindrical housing, said floating piston being capable of reciprocal motion, wherein said floating piston is disposed between a first spring disposed at the first end of said cylindrical housing and a second spring disposed at the second end of said cylindrical housing.

14. The hydraulic braking system of Claim 13 wherein said piston assembly includes a first seal disposed about the first end of said floating piston and a second seal disposed about the second end of said floating piston, said piston assembly further including a vent opening in said cylindrical housing located between the first end and the second end of said floating piston, wherein the displacement of the first seal of said floating piston during reciprocal motion is limited to the area between the first end and said vent opening, and wherein the displacement of the second seal of said

floating piston during reciprocal motion is limited to the area between the second end and said vent opening.

15. The hydraulic braking system of Claim 11 wherein said connecting conduit further includes a valve disposed between said first braking circuit and said floating piston for selectively preventing fluid flow in said connecting conduit.